

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SEMICONDUCTOR COMPONENTS INDUSTRIES, LLC
(d/b/a ON SEMICONDUCTOR),
Petitioner,

v.

POWER INTEGRATIONS, INC.,
Patent Owner.

Case IPR2016-01597
Patent 6,538,908

Before THOMAS L. GIANNETTI, BRIAN J. McNAMARA, and
LYNNE E. PETTIGREW, *Administrative Patent Judges*.

GIANNETTI, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Semiconductor Components Industries, LLC, d/b/a ON Semiconductor (“Petitioner” or “ON Semiconductor”) filed a Petition (Paper 1, “Pet.”) seeking *inter partes* review of claims 1, 3–5, 9, 10, 19, 20, 22–24, and 30–34 of U.S. Patent No. 6,538,908 (Ex. 1001, “the ’908 patent”)¹ pursuant to 35 U.S.C. §§ 311–319. Power Integrations, Inc. (“Patent Owner”) filed a Patent Owner Preliminary Response (Paper 8, “Prelim. Resp.”).

Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we granted Petitioner’s request and instituted an *inter partes* review on all challenged claims. Paper 9 (“Institution Dec.”). Following institution, Patent Owner disclaimed claims 30–34. Ex. 2066. Furthermore, Patent Owner filed a Response to the Petition (Paper 13, “PO Resp.”) and Petitioner filed a Reply (Paper 14, “Pet. Reply”). Both parties waived oral hearing.

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that all challenged non-disclaimed claims of the ’908 patent are unpatentable.

¹ The ’908 patent was reexamined, resulting in the cancellation of claims 12–18. *See* Ex Parte Reexamination Certificate US 6,538,908 C1. Ex. 1002.

II. BACKGROUND

A. The '908 Patent (Ex. 1001)

The '908 patent is titled “Method and Apparatus Providing a Multi-Function Terminal for a Power Supply Controller.” The patent is directed to a switched mode power supply controller. Ex. 1001, col. 1, ll. 11–14.

According to the patent, switched mode power supplies are commonly used “due to their high efficiency and good output regulation.” *Id.* at col. 1, ll. 16–19. In such power supplies, low frequency (e.g., 50 or 60 Hz mains frequency), high voltage alternating current (AC) is converted to high frequency (e.g., 30 to 300 kHz) AC using a switched mode power supply control circuit. *Id.* at col. 1, ll. 19–25. The high frequency, high voltage AC is applied to a transformer to transform the voltage, usually to a lower voltage, and to provide safety isolation. *Id.* at col. 1, ll. 25–27. The output of the transformer is rectified, to provide a regulated DC output, which may be used to power an electronic device. *Id.* at col. 1, ll. 27–29. The switched mode power supply control circuit provides output regulation by sensing the output and controlling it in a closed loop. *Id.* at col. 1, ll. 30–32.

The subject matter of the '908 patent is illustrated by Figure 1, which is reproduced here from the Petition, with annotations provided by Petitioner (Pet. 4):

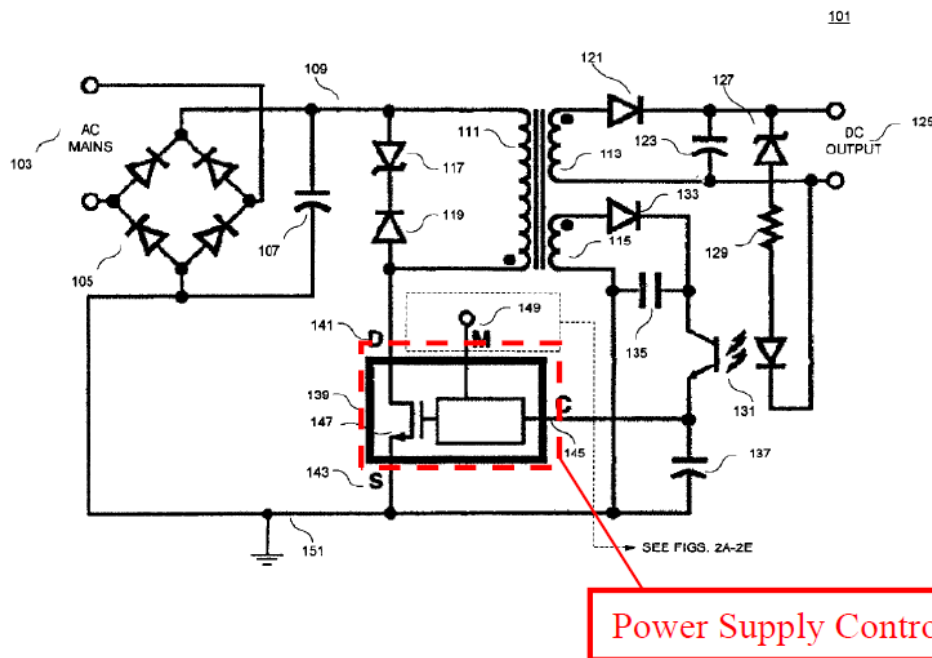


Figure 1 above depicts power supply 101. Ex. 1001, col. 4, ll. 28–29. Controller 139 controls conversion of AC mains input voltage 103 to a desired DC output voltage at DC output 125. *Id.* at col. 4, ll. 29–65. Multi-function terminal 149 enables power supply controller 139 to provide “one or a plurality of different functions, depending on how multi-function terminal 149 is configured.” *Id.* at col. 4, ll. 66–col. 5, l. 3. Figures 2A through 2F of the ’908 patent show various configurations of multi-function terminal 149 to provide various corresponding functions. *Id.* at col. 8, ll. 8–12.

B. Related Matters

Petitioner identifies, as a related matter, IPR2016-00995 (“IPR995”). Pet. 2. Filed by ON Semiconductor, the petition in that IPR sought review of claims 26 and 27 of the ’908 patent, and was granted on October 31,

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2016. IPR995, Paper 11. A Final Written Decision was entered on October 18, 2017. IPR995, Paper 26 (“IPR995 FWD”).

The ’908 patent has also been involved in several civil actions in U.S. District Court, a case before the ITC, and two reexamination proceedings. Pet. 2; Paper 4; Paper 6, 4–6.

C. Illustrative Claims

Of the claims challenged in the Petition, claims 1, 19, and 30 are independent. Claim 30 was disclaimed after institution. *See supra*. Claim 1, reproduced below, illustrates the claimed subject matter:

1. A power supply controller, comprising:

a power switch having first, second and third terminals, the first terminal to be coupled to a transformer of a power supply and the second terminal to be coupled to an input of the power supply;

a control circuit coupled to a control terminal of the power supply controller and the third terminal of the power switch, the control terminal coupled to an output of the power supply, the control circuit to generate a switching waveform to control the power switch; and

multi-function circuitry coupled between a multi-function terminal of the power supply controller and the control circuit, the switching waveform generated in response to the control terminal and the multi-function terminal.

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